THE CHEMICAL DETECTION OF LEAD AND IRON BULLETS IN GUNSHOT WOUNDS.

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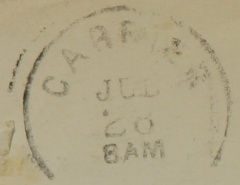
[Read before the Maryland Academy of Sciences.]

Gentlemen:

I desire to bring to the attention of the Academy a method for the more certain detection of leaden and iron bullets when imbedded in the tissues, as in gun-shot and shell injuries, especially where they have taken an obscure or curved course, and cannot be readily felt by finger or probe.

The plan was suggested in 1863 by noticing a case in hospital where sulphuretted hydrogen from pus had blackened ordinary lead plaster, and after a little thought was tried and perfected on the spot. It consists of employing materials capable of dissolving lead or iron, such as very dilute nitric acid, and then testing the solution by the usual plan for those metals.

The apparatus for its application and the method required are very simple, consisting of a syringe to thoroughly cleanse the wounds with pure water, after which a solution of nitric acid, 5 to 15 drops to a drachm of distilled water, is injected into the wound and allowed to remain a short time, to come in contact with and dissolve a portion of the ball. The injected fluid is then withdrawn either by syringe or changing the position of the patient so as to let it run out, and is received when possible at two places, upon a white porcelain plate. One of these spots is now to be tested by a small crystal or solution of iodide of potassium, which will produce a golden yellow color if lead be present. The other may be treated by a solution of sulpho-cyanide of potassium, giving a beautiful red, or ferro-cyanide of potassium affording blue if iron be there. Both of these methods are extremely delicate, and can only be obscured by neglect to wash away pus with accompanying chloride of sodium, or inexcusable carelessness causing loss of blood, and thus producing the reactions of iron from the small quantity contained in the blood-globules. To show most efficiently, the fluid on the plate ought to be colorless, or but slightly tinged like serum. The syringe should generally be introduced but a short distance into the wound, so as to give rise to as little irritation as possible, and the nitric acid solution for the same reason be very dilute. The whole procedure is less irritant than probing, and also extremely useful to the patient, as dilute nitric acid has long been esteemed one of our best dressings for hospital sores. Other solvents and tests might be employed, but the above are the handiest.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